Ptilotus senarius A.R.Bean (Amaranthaceae), a new species from northern Queensland

A.R. Bean

Summary

Bean, A.R. (2014). *Ptilotus senarius* A.R.Bean (Amaranthaceae), a new species from northern Queensland. ***Austrobaileya*** **9(2): 203–206**. The new species *Ptilotus senarius* A.R.Bean, recorded only between Georgetown and Croydon, is described, illustrated, and differentiated from similar taxa. A conservation status of Presumed Extinct is proposed.

Key Words: Amaranthaceae, *Ptilotus*, *Ptilotus senarius*, Australia flora, Queensland flora, new species, taxonomy, presumed extinct, conservation status

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Introduction

Ptilotus is a genus of about 100 species, of which 31 occur in the four eastern states of Australia (Bean 2008). Within the family Amaranthaceae, it is characterised by the alternate leaves, the ovoid to cylindrical inflorescences, single-seeded fruits and the flowers with five tepals bearing hairs at least towards the base.

In late 2008, the present author distinguished the species here described from herbarium specimens at BRI. They had been identified by G. Benl as *Ptilotus exaltatus* var. *semilanatus* (now known as *P. nobilis* subsp. *semilanatus* (Lindl.) A.R.Bean).

The new species does appear to have some affinity to *Ptilotus nobilis* subsp. *semilanatus*, although it is geographically disjunct from that taxon. It has similar vegetative characteristics to *P. fusiformis* (R.Br.) Poir., but is very different in floral morphology. The new species is diagnosed against these two taxa.

Despite a relatively small target search area, no one has been able to relocate the species in the field and it is presumed **Extinct** at present.

Materials and methods

All herbarium specimens of *Ptilotus* held at BRI and MEL have been examined. Measurements were made from dried material.

Taxonomy

Ptilotus senarius A.R.Bean **sp. nov.** *P. nobili* subsp. *semilanato* affinis sed foliis angustioribus, caulibus pilis stellatis praeditis, ovario glabro et inflorescentiis paucifloris differens. **Typus:** Queensland. Cook District: Riverview, Gilbert River, 10 May 1967, *S.J. Dansie 3873* (holo: BRI; iso: CANB, *distribuendi*; CNS, image seen).

Ptilotus sp. (Gilbert River L.J. Brass 430); Bostock & Holland (2010: 9).

Slender branched shrub 30–60 cm high, with a woody base. Stems terete, densely stellate hairy on new growing tips, but only sparsely hairy elsewhere. Hairs stellate or pseudo-stellate (with the radial arms perhaps not all arising from the same point), 0.15–0.3 mm diameter, broader than high, white, rays 3–12, no central ray discernable. Leaves alternate, linear, 7–31 mm long, 0.6–1.5 mm wide, apex acute, base attenuate, petiole absent, glabrous or with sparse stellate hairs. Inflorescence terminal, 1–6(–8)-flowered, with flowers disposed at various angles to the stems and rachis; bracts persistent on rachis,

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broadly ovate, cymbiform, 2.7–3.2 mm long, apex acute, outer surface densely covered by stellate and verticillate hairs except laterally; bracteoles caducous, ovate, cymbiform, 3.8–4.6 mm long, apex aristate, outer surface densely covered by verticillate and stellate hairs; perianth 15–19 mm long at anthesis; tepals 5, fresh colour unknown, grey when dried, linear, straight, apex acute, dorsal surface densely covered by antrorse verticillate hairs 0.4–0.6 mm long, and antrorse septate hairs 2.3–6 mm long; distal 1–1.5 mm of tepals without any hairs attached. Two outer tepals slightly longer than three inner tepals; outer tepals glabrous on ventral surface; inner tepals with dense woolly hairs on proximal one-third of ventral surface, otherwise glabrous. Fertile stamens 3, 7–10 mm long; filaments slender, brown; anthers *c*. 1.7 mm long, caducous. Ovary glabrous throughout. Style 8–12 mm long, mostly straight, but sinuously curved at about halfway along its length, eccentrically inserted on ovary; stigma expanded. **Figs. 1, 2.**

***Additional specimen examined*: Queensland.** Cook District: Gilbert River, Jun 1925, *Brass 430* (BRI).

***Distribution and habitat*:** *Ptilotus senarius* has been collected only near the Gilbert River, between Georgetown and Croydon in northern Queensland. The habitat given for the two collections is somewhat contradictory: one label with “in tea-tree forest” i.e. dominated by *Melaleuca* spp., most of which favour low-lying areas; while the other with “on grassy hills”.

***Phenology*:** Flowers are recorded for May and June.

***Affinities*:** *Ptilotus senarius* is perhaps closely related to *P. nobilis* subsp. *semilanatus*, as they both have narrow leaves, tepals of about the same length, and similar tepal indumentum. However, *P. senarius* is readily distinguished by the leaves less than 1.5 mm wide and without sinuate margins (leaves 2–10 mm wide and with sinuate margins for *P. nobilis* subsp. *semilanatus*), the glabrous ovary (hairy for *P. nobilis* subsp. *semilanatus*), inflorescences 1–6(–8)-flowered (30–100-flowered for *P. nobilis* subsp. *semilanatus*), flowers projecting at various angles from the rachis (flowers perpendicular to rachis and stem for *P. nobilis* subsp. *semilanatus*) and the stems with stellate hairs (hairs absent or verticillate for *P. nobilis* subsp. *semilanatus*).

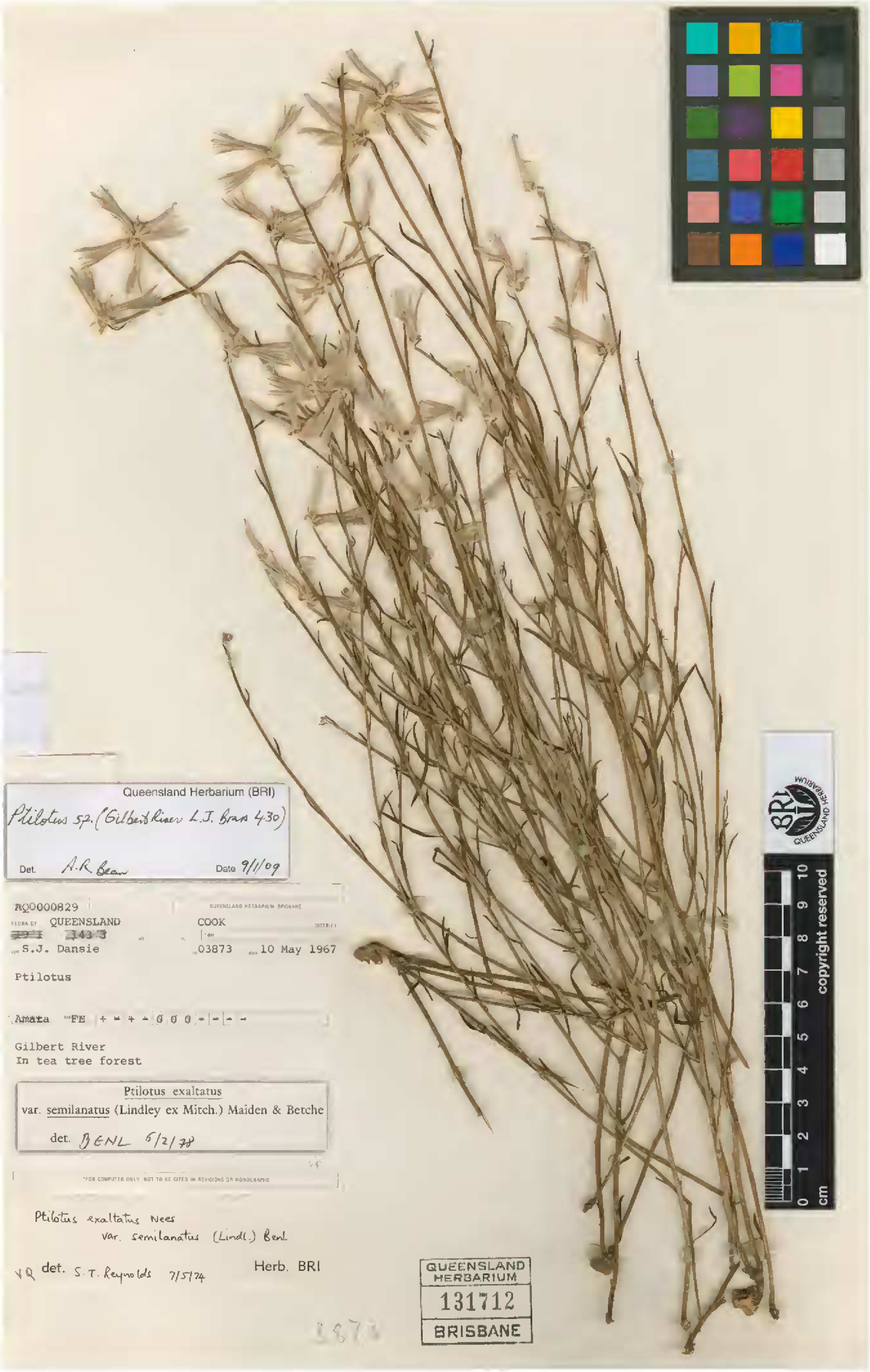
Ptilotus senarius is similar to *P. fusiformis* in height and form of the plant, and the similarly linear leaves. The stems and leaves of both species appear to the naked eye to be glabrous. However, *P. senarius* is readily distinguished by its stems with small stellate hairs (glabrous for *P. fusiformis*), inflorescences 1–6(–8)-flowered (12–27-flowered for *P. fusiformis*), perianth 15–19 mm long (8–13 mm long for *P. fusiformis*), and the tepals with both verticillate and septate hairs on the dorsal surface (with septate hairs only for *P. fusiformis*).

***Conservation status*:** It is considered that the distribution of the species is relatively well circumscribed, and nearly 50 years have elapsed since the most recent known sighting.

A major road passes through the Gilbert River area, giving ready access to botanists, and the May–June period (when the previous collections were made) is a popular time for travel in this region. Hence one expects that further serendipitous collections would have been made since 1967, if the species were present.

Since the recognition of the species in late 2008, several active searches have been made in the Gilbert River area, mainly around May and June, but also at other times of the year. During these years, the area has been subject to a widely varying regime of rainfall and temperature patterns, including periods suitable for germination of herb and shrub species. Much of the area is without major weed infestation (except in riparian areas), but cattle grazing has been a continuous land use for a century or more. *Ptilotus* species are known to be sensitive to grazing pressure (Letnic 2004; Fensham *et al*. 2010).

Taking into consideration the grazing threat, the well circumscribed distribution, the time elapsed since the most recent collection, and the inability to locate further plants, a category of **Presumed Extinct** (X) is proposed (IUCN 2001).


Queensland Herbarium (BRI)
Ptilotus sp. (Gilbert River L.J. Bean 430)
Det. A.R. Bean Date 9/1/09
AQ0000829
QUEENSLAND HERBARIUM BRISBANE
FLORA OF QUEENSLAND
COOK
DISTRICT
S.J. Dansie
03873
10 May 1967
Ptilotus
Amata
Gilbert River
In tea tree forest
Ptilotus exaltatus
var. semilanatus (Lindley ex Mitch.) Maiden & Betche
det. BENL 6/2/78
*FOR COMPUTER ONLY NOT TO BE CITED IN REVISIONS OR MONOGRAPHS
Ptilotus exaltatus Nees
var. semilanatus (Lindl.) Benl
VQ det. S.T. Reynolds 7/5/74
Herb. BRI
QUEENSLAND HERBARIUM
131712
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cm 0 1 2 3 4 5 6 7 8 9 10

Fig. 1. Holotype of ***Ptilotus senarius*** (*Dansie 3873*) (BRI).

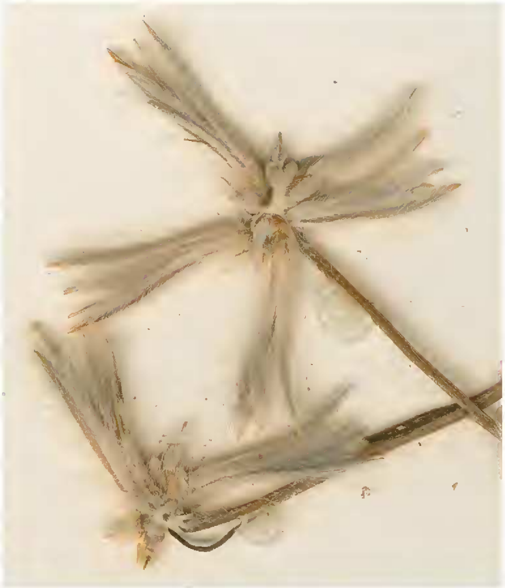

Fig. 2. Inflorescences of *Ptilotus senarius* (*Dansie 3873*) (BRI).

***Note*:** The isotype at CNS bears the locality "Riverview, Gilbert River", whereas the holotype specimen at BRI merely states "Gilbert River".

***Etymology*:** From the Latin *senarius* meaning 'consisting of six'. This refers to the few flowers making up each inflorescence, usually no more than six.

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References

Bean, A.R. (2008). A synopsis of *Ptilotus* (Amaranthaceae) in eastern Australia. *Telopea* 12: 227–250.

Bostock, P.D. & Holland, A.E. (eds.) (2010). *Census of the Queensland Flora 2010*. Queensland Herbarium, Department of Environment and Resource Management: Brisbane.

Fensham, R.J., Fairfax, R.J. & Dwyer, J.M. (2010). Vegetation responses to the first 20 years of cattle grazing in an Australian desert. *Ecology* 91: 681–692.

Iucn (2001). *IUCN Red List Categories and Criteria. Version 3.1.* Gland: IUCN – The World Conservation Union.

Letnic, M. (2004). Cattle grazing in a hummock grassland regenerating after fire: the short-term effects of cattle exclusion on vegetation in south-western Queensland. *Rangeland Journal* 26: 34–48.